CLAIMS AMENDMENTS

1 (Currently amended). An apparatus for detecting TWA in potential cardiac patients

comprising:

a sensor adapted to sense an ECG from a patient;

a T wave detector adapted to detect a plurality of T waves in said ECG;

an analyzer adapted to perform at least one of ~~the~~ a statistical <u>test</u> ~~tests~~

and a periodicity transform on characteristics of said T waves to make a decision

on whether TWA are present or not.

2 (Original). The apparatus of claim 1 wherein said analyzer is adapted to perform

at least one of the following statistical tests: difference in means, adjacent values,

Raleigh and number of zero crossings.

3 (Original). The apparatus of claim 1 wherein said analyzer performs both said

statistical test and said periodicity transform, said analyzer including a combining

element adapted to combine the results of said tests to generate said decision.

4 (Original). The apparatus of claim 1 wherein said T wave detector is adapted to

detect at least one of the following T wave characteristics: peak value, area

under the T wave, curvature, ST segment slope, and area of smaller T wave

segments.

5 (Original). The apparatus of claim 4 wherein said analyzer is adapted to determine said characteristic for a plurality of consecutive T waves to form a series, said analyzer being adapted to operate on said series.

6 (Original). The apparatus of claim 5 further comprising a template generator adapted to generate a template for said T waves based on the characteristics of a plurality of T waves.

7 (Original). The apparatus of claim 6 further comprising a comparator adapted to compare a current T wave to said template, and to reject said current T waves from processing if it differs substantially from said template.

8 (Withdrawn). An apparatus for detecting TWA in potential cardiac patients comprising:

a sensor adapted to sense an ECG from a patient;

a T wave detector adapted to detect a plurality of T waves in said ECG;

an analyzer adapted to perform a periodicity transform on characteristics of said T waves to make a decision on whether TWA are present or not.

9 (Withdrawn). The apparatus of claim 8 wherein said T wave detector is adapted to detect at least one of the following T wave characteristics: peak value, area

under the T wave, curvature, ST segment slope, and area of smaller T wave segments.

10 (Withdrawn). The apparatus of claim 9 wherein said analyzer is adapted to determine said characteristic for a plurality of consecutive T waves to form a series, said analyzer being adapted to operate on said series.

11 (Withdrawn). The apparatus of claim 10 wherein said analyzer is adapted to project said series into 1-p space to detrend said series.

12 (Withdrawn). The apparatus of claim 11 wherein said analyzer is adapted to project said series into a 1-p space and a 2-p space, to determine a result for each projection and to combine the results of said projections to make said decision.

13 (Withdrawn). The apparatus of claim 8 further comprising a template generator adapted to generate a template for said T waves based on the characteristics of a plurality of T waves.

14 (Withdrawn). The apparatus of claim 13 further comprising a comparator adapted to compare a current T wave to said template, and to reject said current T waves from processing if it differs substantially from said template.

15 (Withdrawn). A method of detecting the presence of TWA in a cardiac patient

comprising the steps of:

detecting an ECG from the patient;

sensing a plurality of T waves in said ECG;

determining a characteristic of said T waves;

performing a periodic transform on said characteristics;

16 (Withdrawn). The method of claim 15 further comprising the step of making a

decision about the presence of TWA based on said periodic transform.

17 (Withdrawn). The method of claim 15 further comprising performing at least one

statistic test on said characteristics and generating a result based on said

statistic test.

18.(Withdrawn) The method of claim 16 further comprising performing a plurality of

different statistic tests on said characteristics, generating a result for each test

and combining said results into a single decision.

19 (Withdrawn). The method of claim 15 further comprising generating a template

based on said characteristic and using said template to discriminate between

normal and ectopic beats.

20 (Withdrawn). A method of detecting the presence of TWA in a cardiac patient comprising the steps of:

detecting an ECG from the patient;

sensing a plurality of T waves in said ECG;

determining a characteristic of said T waves;

performing a statistical test on said characteristics;

making a decision about the presence of TWA based on said statistical tests.

21 (Withdrawn). The apparatus of claim 20 wherein said analyzer makes said decision based on a plurality of preset rules, said analyzer being adapted to modify said preset rules when more robust rules become available.

22 (Withdrawn). The apparatus of claim 1 wherein said analyzer is adapted to perform the detection of TWA presence independent of the heart rate.

23 (Withdrawn). The apparatus of claim 8 wherein said analyzer is adapted to perform the detection of TWA presence independent of the heart rate.

24 (Withdrawn). The method of claim 20 wherein said analyzer is adapted to perform the detection of TWA presence independent of heart rate conditions.